

AEROSPACE MATERIAL SPECIFICATION



AMS 2308A

Issued
Cancelled

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Magnetic Rubber Inspection

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1. SCOPE:

1.1 Purpose:

This specification covers the procedural requirements necessary for the performance of magnetic rubber inspection.

1.2 Application:

This procedure has been used typically for detecting the presence of cracks and other imperfections on and immediately below the surface of ferromagnetic material. Magnetic rubber inspection may be applied to raw material, billets, finished and semi-finished materials, welds, and in-service parts. Magnetic rubber inspection is not applicable to non-ferromagnetic metals and alloys.

- 1.2.1 Magnetic rubber inspection involves the use of a special formulation of magnetic powder in room-temperature curing liquid rubber. The material is poured onto the test part and a magnetic field is applied. This causes the magnetic particles to migrate through the liquid rubber and concentrate at the location of cracks or other discontinuities in the test metal. The rubber is then allowed to cure and the solid cast impression (replica) is removed from the part. An examination at low magnification reveals the location of cracks as dark lines of concentrated powder. Since the rubber has conformed to the exact contour of the test area, the casting also displays surface conditions such as roughness and machining quality.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2309 Magnetic Rubber Inspection Material

2.2 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-STD-410 Nondestructive Testing Personnel Qualification and Certification

3. TECHNICAL REQUIREMENTS:

3.1 Material, Equipment, and Supplies:

3.1.1 Material: The magnetic rubber inspection material used in this process shall meet the requirements of AMS 2309.

3.1.2 Equipment:

3.1.2.1 Magnetizing Equipment: All magnetizing apparatus shall be capable of reliably providing uniform, controlled magnetic field strengths as required in the testing of each part. Each magnetizing apparatus shall be capable of inducing in the piece under inspection a magnetic flux of suitable intensity in the desired direction.

3.1.2.1.1 A variable output DC electromagnetic yoke is preferred.